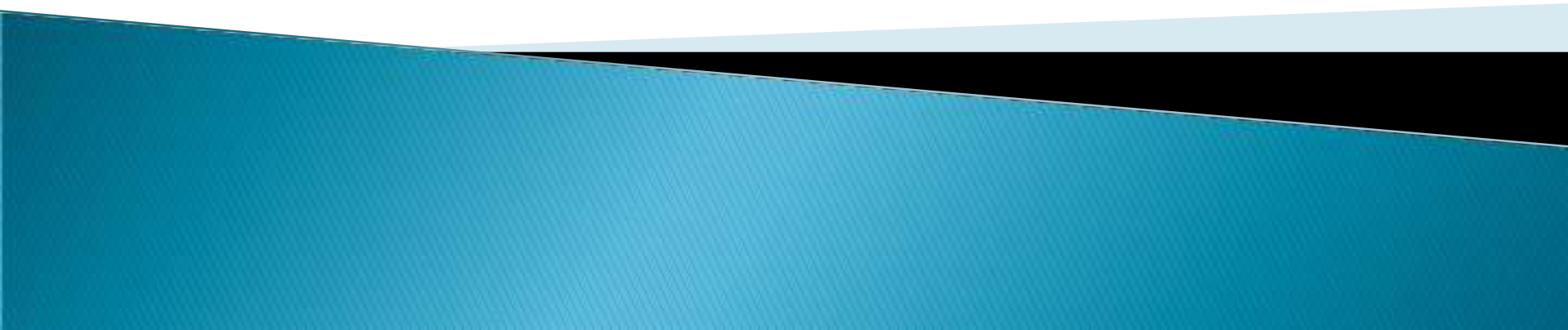


# THE ROLE OF ASSOCIATIONS WITHIN CLUSTERS IN TECHNOLOGICAL CAPABILITY BUILDING: THE CASE OF GEREZANI METAL WORKING CLUSTER

By  
Linda Ernest, STIPRO.



# Outline

- ▶ Introduction
  - ▶ Research Objectives
  - ▶ Research Questions
  - ▶ Statement of the problem
  - ▶ Conceptual Framework
  - ▶ Research Methodologies
  - ▶ Research Findings
  - ▶ Conclusion
  - ▶ Recommendation
  - ▶ Area For Further Studies
- 

# Introduction

- ▶ For Small Scale and Medium Enterprises (SMEs) formation of clusters is very important.
  - ▶ Clusters enable enterprises to overcome many binding constraints in the area of capital, skills, technology, market etc,
  - ▶ According to Porter, (1990) clusters can be defined by two key attributes namely geographical/spatial distribution and sectoral dimension.
  - ▶ Cluster is a group of firms engaged in similar or related activities in a national economy.
- 

# Statement of the Problem

- ▶ Gerezani cluster has become a major place where metal working is taking place. Study by Visser (1999) revealed that associations within clusters help in building technological capabilities.
  - ▶ However, in Tanzania, research –based knowledge is lacking on this important topic issue.
  - ▶ As such, this study is a modest attempt to capture the extent to which association is building technological capabilities in Gerezani metal working cluster.
- 

# Research Objectives

## Main Objective

- ▶ To investigate the role of associations within clusters in technological capability building focusing, on Gerezani metal working cluster

## Specific Objectives

- ▶ To identify the level of technological capabilities
  - ▶ To identify the role of association in building technological capabilities
- 

# RESEARCH QUESTIONS

- ▶ What is the level of technological capability building in Gerezani metal working cluster?
  - ▶ What is the role of association in building technological capabilities in Gerezani metal working cluster?
- 

# CONCEPTUAL FRAMEWORK

- ❖ Conceptual framework used in this study was the concept of associations within clusters and technological capabilities building
  - ❖ Associations- Union or network of persons who are doing similar activities so as to achieve their common economic, social, and cultural needs and aspirations. Associations are meant to empower people to improve their quality of life and enhance their economic opportunities through self-help (The NCBA (2005))
  - ❖ Technological capability- ability to create and improve the products or processes using the skills and knowledge acquired (Lall,1992)
  - ❖ The assumption made here is that association enabled technological capability through the following
    - Learning by doing
    - Equipment sharing
    - Inter firm linkages
    - Staff hiring ((Bell, 1984)).
- 

# Research methodology

- ▶ Qualitative and quantitative methods

- ❖ **Study Area**

- ▶ The study was carried out in Dar as Salaam at Ilala District specifically Gerezani Metal working area.

# methodology .....cont

- ❖ **Sample Size** 50 respondents who are metal manufacturers but only 39 respondents did respond
- ❖ **Sampling Techniques**
- ❖ Random sampling
- ❖ **Data Collection Methods**
  - ▶ Questionnaire
  - ▶ Field Observation
  - ▶ Interview
  - ▶ **Data Analysis**

Data was analyzed to measure level of technological capability and the role of association.



# Research Findings

- ❖ **Basic Information about Respondents**
- ❖ **Age of the firms**—23% of the firms had below 10 years , 35 % had below 20 years, 41% had more that 20 years
- ❖

# Basic Information Cont...

## ❖ Ownership

- ❖ 79.5% are owned by single individuals
- ❖ 20% are owned as joint venture

# Basic Information

## ▶ Employee Status

74% are self employed

17.9% work as trainees

7% are temporary workers

# Basic Information

- educational level of the firm owner

- 48% had primary
- 35% vocational trainings
- 10 %had secondary education
- 5 %had no any education.
-

# Products produced

- ▶ frying pan, metal stoves, metal windows and doors, chicken feeders, cake making machines, vibrating block making machines

# SOURCES OF KNOWLEDGE

- 53% source knowledge from internal (firms workers).
- 2.6% is from other firms and institution,
- 25% is from suggestions from customers
- 18% is from exhibition and meetings.

# Levels of Technological capability

- To measure the level of technological capability of the firm, the frame work proposed by Lall (1992) is used. Its levels include basic, intermediate and advanced levels.
  - ▶ The basic level- Maintenance of machinery and equipment, planning and control productions, replication of products, minor modifications
  - ▶ Intermediate level- Use of automation process, manufacture components
  - ▶ Advanced level is the ability of the firm to invest in R&D to develop new products, introduce major improvements in the machines and develop the new equipment.
- 

# Findings

- ▶ **Replication of product technology**
  - ▶ **64% replicate**
  - ❖ **Machinery and Equipment Maintenance**
  - ▶ 97% of the firms at the Gerezani metal working cluster do maintain the machinery and equipment
  - ❖ **Planning and control of production**
  - ▶ 97.4% of the firms conduct planning and control of the production
- 

# Level of technological capability...cont

- ❖ **Minor changes to process technology**

41% managed to do minor changes to process technology

- ❖ **Automation process**

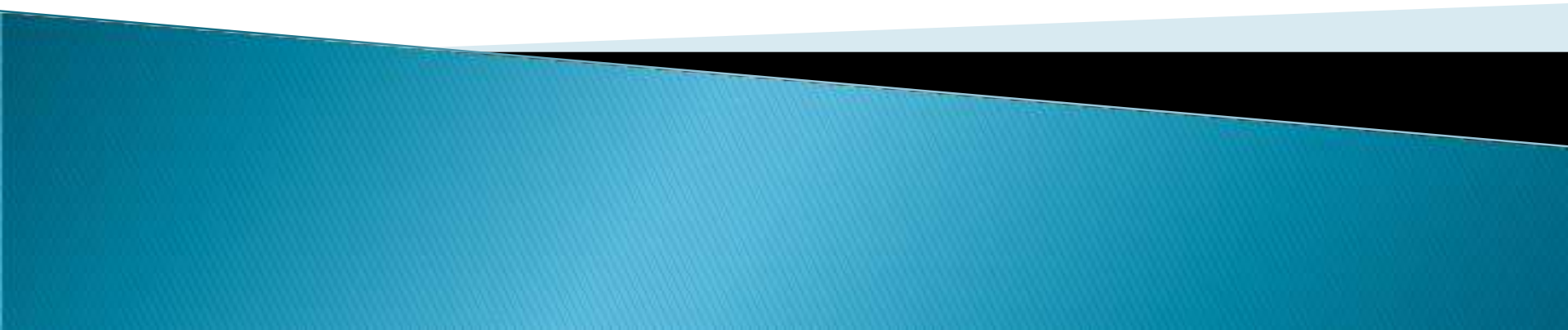
- ▶ 53% of the respondents had the ability of using auto machines

- ❖ This means that the levels of technological capability found in Gerezani metal working clusters are basic and intermediate.

# Association in building technological capability

- ▶ Provision equipment– Association buy machines and make them available to all members. The machines are expensive to be bought by single individuals.
  - ▶ Provision of trainings– Association invites expertise from training institutions like SIDO
  - ▶ Also, sending technicians to exhibitions. During exhibition association at Gerezani metal cluster attend with their experienced technicians and artisans. This is the time when participants display the products. The responsibility of these technicians and artsan is to watch the products and collect technical details about the products ranging from things such as structures, assembly methods, to installed parts and components.
  - ▶ These technicians extract technical intelligence quite efficiently through such means and later apply it to their firms by developing new products.
- 

# Association in building technological capability cont...

- ❖ Loan provision–Association provides loans to members who get project and have no capital to conduct that project
  - ❖ Potential customers. Association find customers of the products produced its member from different sectors such in schools, Magereza, government offices
- 

# Conclusion

- ❖ Cluster association seems to have potential in building technological capability in Gerezani metal working cluster through equipment provision, training both within and outside, loan provision and customer search

# Areas for Further Research

- ▶ Factors that hinder the development of clusters in Tanzania
- ▶ There is a need for the similar work to be conducted in other clusters such as food processing and curves

**Thanks for your attention and  
listening.**

